



EPA Region 5 Records Ctr.



314338

ARCADIS
10559 Citation Drive
Suite 100
Brighton
Michigan 48116
Tel 810.229.8594
Fax 810.229.8837
www.arcadis-us.com

Mr. James Saric
Remedial Project Manager
USEPA Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, IL 60605-3507

Subject:

Response to Comments on Revised Kalamazoo River SRI Phase 2 Sediment Core Analyses Plan

SEDIMENTS

Dear Mr. Saric:

Date:

November 17, 2008

On behalf of the Kalamazoo River Study Group (KRSG), attached are responses to United States Environmental Protection Agency (USEPA) comments provided in a letter dated October 15, 2008 and Michigan Department of Environmental Quality (MDEQ) comments provided in a letter dated September 19, 2008 on the Phase 2 Sediment Core Analyses Plan for the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site. The revised plan will be submitted under separate cover.

Contact:

Michael J. Erickson

Phone:

810.225.1924

Email:

michael.erickson@
arcadis-us.com

Please contact me with any questions.

Our ref:

B0064539.500

Sincerely,

ARCADIS

Michael J. Erickson, P.E.
Associate Vice President

Copies:

Paul Bucholtz, MDEQ
Jeff Keiser, CH2M HILL
Todd Goeks, NOAA
David Guier, Millennium Holdings, LLC
Suda Arakere, Millennium Holdings, LLC
Mark Brown, Ph.D., Georgia-Pacific LLC
Garry Griffith, Georgia-Pacific LLC
Michael Scoville, ARCADIS
Kristi Maitland, ARCADIS

ARCADIS

Mr. James Saric
November 17, 2008

Enclosures:

Response to USEPA October 15, 2008 Comments on the August 2008 Revised
Kalamazoo River SRI Proposed Phase 2 Sediment Core Analyses Plan

Response to MDEQ September 19, 2008 Comments on the August 2008 Revised
Kalamazoo River SRI Proposed Phase 2 Sediment Core Analyses Plan

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

**RESPONSE TO USEPA OCTOBER 15, 2008 COMMENTS
ON THE AUGUST 2008 KALAMAZOO RIVER
SRI PHASE 2 SEDIMENT CORE ANALYSIS PLAN**

USEPA Comment #. 1

The objectives must be included in the plan to clarify the purpose of the sediment core analysis.

Response:

The work plan text has been revised to include the primary objective of this phase of work.

USEPA Comment #. 2

The core descriptions referenced from the Technical Memorandum – Data Report should be directly incorporated into this plan. The Data Report was an informal submittal and not subject to U.S. EPA formal review, comment and approval. Therefore, references to the Data Report should not be included in this sampling plan or future sampling plans.

Response:

The work plan has been revised to directly include all information cited in the *Kalamazoo River Area 1 SRI Phase 1 Data Report*.

USEPA Comment #. 3

Although the discussion of how sediment cores were classified as fine versus coarse is much improved, there still remains a concern that this approach may not achieve the goal of obtaining 75% fine cores. If upon core analysis, as described in the plan, it is determined that the majority of the cores do not contain fine sediment, additional core selection for analyses may be necessary. Therefore, the core analyses must be conducted with U.S. EPA oversight to ensure the selection of cores containing a majority of fine sediments while still obtaining data representative of each section of the Kalamazoo River. The plan should be changed to reflect U.S. EPA oversight of core analyses, and the flexibility to select alternative cores for analyses depending on the availability of fine grained sediment in the collected cores.

Response:

Agency-approved language has been added to the work plan text to provide for flexibility in core selection during processing activities, as needed, to maintain the targeted sampling approach.

KALAMAZOO RIVER STUDY GROUP
ALLIED PAPER, INC./PORTAGE CREEK/KALAMAZOO RIVER SUPERFUND SITE

**RESPONSE TO MDEQ SEPTEMBER 19, 2008 COMMENTS
ON THE AUGUST 2008 KALAMAZOO RIVER
SRI PHASE 2 SEDIMENT CORE ANALYSIS PLAN**

MDEQ Comment #. 1

There is no specific objective identified in the work plan. This is important, as the goal of achieving a 75% proportion of fine cores does not appear to be possible, given the selected sampling strategy of regularly spaced transects.

Response:

Additional text has been added to the work plan to specifically discuss the overall objective of the proposed activities. The work plan is intended to supplement the *SRI/FS Work Plan: Morrow Dam to Plainwell Dam* and provide information on how the objectives presented therein will be met. The work plan fulfills this need by proposing a core analyses scheme that provides relatively uniform spatial coverage (based on selection of samples from all transects) and maintains the approximate 75 percent/25 percent split between fine and coarse cores (although the *SRI/FS Work Plan: Morrow Dam to Plainwell Dam* does not specify the basis for fine and coarse designations). Additional USEPA-approved language in the work plan provides for flexibility in core selection during processing activities to obtain additional fine sediment core samples if the samples currently designated as fine sediment are not representative.

MDEQ Comment #. 2

The work plan, as conceived, was designed to collect cores along regular transects, and bias the selection of cores for laboratory analysis based on grain size (approximately 75% fine). It is clear that achieving both of these goals utilizing the described sample design is not possible. It is also clear from the work plan that ARCADIS prefers to pursue the design of the sampling plan (e.g., regular transects) at the expense of the other aspect of the sampling plan that the MDEQ considers equally important (e.g., collection of an appropriately fine-biased core set). As the work elements identified in this plan are strictly related to the processing of cores that have already been collected, it would seem prudent to also visually inspect the other cores that have already been collected in this reach of the river to determine if they contain the desired fines content, for inclusion in this core analysis effort.

Additionally, the identified work elements for this portion of the river call for the analyses of up to 40 additional cores and an additional round of core collection. It is recommended if we are not able to achieve our desired proportion of fine cores during this core-processing exercise, that we collect the necessary additional cores during mobilization for the future sampling event.

Response:

MDEQ's statement that it is not possible to achieve both goals of sampling along transects and achieving approximately 75% of samples representative of fine sediment is unsupported. MDEQ is correct that ARCADIS prefers to follow the transect sampling approach described in the USEPA-approved *SRI/FS Work Plan: Morrow Dam to Plainwell Dam*. MDEQ's interests in an "appropriately fine-biased core set" is vague and without definition of specific purpose and what "appropriately fine-biased" means, a specific response to this comment is difficult. Language describing the flexibility to substitute selected samples with other samples if needed has been added to the work plan; however, since all locations described as "fine" have been targeted for analysis, it is unclear how the work plan pursues a sampling design that is at odds with the "collection of an appropriately fine-biased core set. In the July 15, 2008 meeting in Chicago, USEPA and MDEQ emphasized that the goal of including approximately 75 percent fine sediment locations should not be interpreted as a minimum number of fine sediment samples. Further, the Agency representative stated that if insufficient fine sediment locations were identified, that a reasonable number of fine sediment locations should be targeted even if that approach results in somewhat less than 75 percent of the total number of sample locations.

MDEQ Comment #. 3

The work plan makes reference to *Technical Memorandum – Kalamazoo River Area 1 SRI Phase 1 Data Report* (Phase 1 SRI Data Report) (ARCADIS 2008) in several locations. As this memo was not formally reviewed and commented on by the agencies, it should not be referenced in this or future work plans. Instead, it would be more beneficial to the reviewer to have all pertinent information that was used to support the proposed work elements to be incorporated into the work plan.

Response:

The work plan has been revised to directly include all information cited in the *Kalamazoo River Area 1 SRI Phase 1 Data Report*.

MDEQ Comment #. 4

The last paragraph on page 2/6 describes at length the methods used to classify the cores for texture. The discussion on the previous examination of the method should be removed from the work plan. It will be better to evaluate the effectiveness of the techniques using the data currently being collected.

Response:

The techniques used for core classification and described in this work plan have been utilized in past sampling efforts, and will continue to be utilized in future efforts. Because the method is applicable to the current core analyses on the river, it will remain in the work plan for documentation purposes.

MDEQ Comment #. 5

In order to obtain data sets that are comparable to previous data sets, core sectioning, description, and processing should be performed in a manner consistent with the techniques utilized during the Plainwell No. 2 Dam activities. This is not explicitly stated in the work plan, but the MDEQ wishes to build on the success of the Plainwell No. 2 Dam processing event and the consistency in oversight that was developed by the agencies during that core processing activity.

Response:

The techniques utilized during the Plainwell No. 2 Dam activities were consistent with those used previously on the river, and included coordination with agency oversight, as appropriate. This same approach would be utilized here, and as such would be consistent with both Plainwell No. 2 Dam activities and previous river activities. It is stated in the work plan that all sediment cores will be processed and analyzed in accordance with the methods and protocols in the USEPA-approved Area 1 SRI/FS Work Plan and the Multi-Area Field Sampling Plan.

MDEQ Comment #. 6

As only 2 cores are selected for expanded analyses it won't be possible to characterize the nature of the most representative fine-grained sediment for these compounds. As such, locations should be selected based on the likelihood of such compounds being present (e.g., areas with grey material, sheens, or odors).

Response:

As described in the USEPA-approved Area 1 SRI/FS Work Plan and the letter work plan, a total of four cores (two from each of the targeted reaches) were selected for expanded analyses in an effort to include sediments representative of those found in these river areas. The selection process included a review of descriptions for each core, as well as an evaluation of core location relative to the others collected in an area. As such, the selected locations are believed to be representative of the greater sediment characteristics in these areas, rather than of localized deposits that may display characteristics different than most sediment in the river. Nevertheless, KRT16-8 was also selected to further examine the gray

materials noted in this core. A provision to select alternative cores, if needed, in consultation with the Agencies has been added to the work plan.

MDEQ Comment #. 7

The Field Sampling Plan indicates that "select intervals, including the surface sample of each core, will be analyzed for TOC [total organic carbon], and particle size distribution". Given the discrepancies in textural classifications to date, grain-size analyses should be performed on all fine cores and a subset of coarse cores submitted for analyses to inform our understanding of the effectiveness of the qualitative characterization techniques used in the field.

Response:

The USEPA-approved Area 1 SRI/FS Work Plan does indicate that **select** intervals will be analyzed for particle size distribution, not all samples of a given texture designation. Thus, this analysis scheme will be applied to the next phase of work performed on the river. Additionally, it remains unclear as to what discrepancies in texture classifications exist, as MDEQ does not provide detail on what discrepancies are being referred to.